CAA JOURNAL

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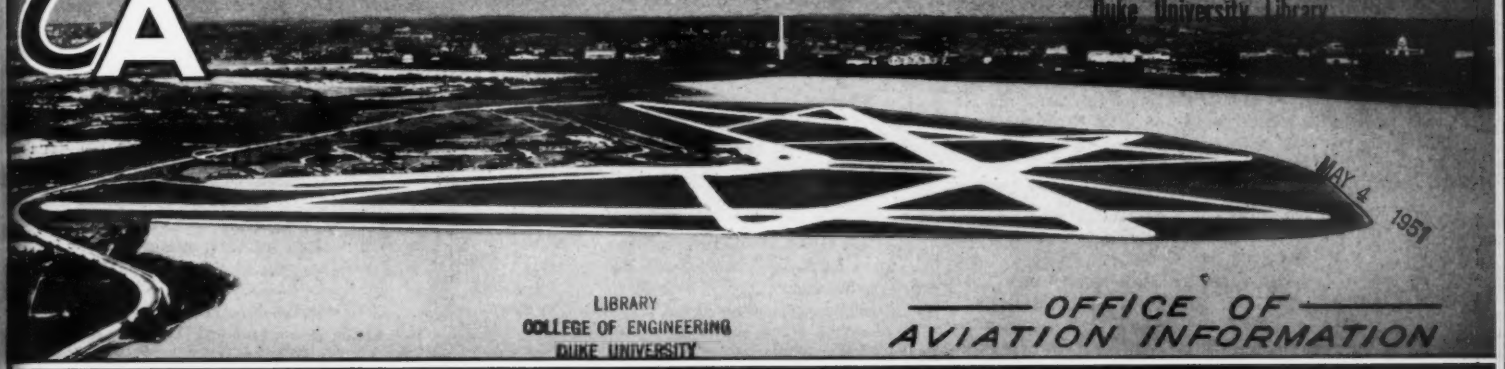

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Eng'g

Horne Appointed CAA Head; Nyrop New Board Chairman

Charles F. Horne, former Acting Director of CAA's Office of Federal Airways, was appointed by President Truman to succeed Donald W. Nyrop as Administrator of Civil Aeronautics. Mr. Nyrop was appointed Member of the Civil Aeronautics Board and designated as Chairman by President Truman, filling the vacancy created by the appointment of former Board Chairman D. W. Rentzel to the post of Under Secretary of Commerce for Transportation.

Mr. Horne, who became Acting Director of the Office of Federal Airways in 1949, has devoted most of his life to programs connected with communications, electronics, and aviation.

He was graduated from the United States Naval Academy in 1926 and in 1932 returned for postgraduate courses. Following this, he studied communications and electronic engineering at Harvard University, where he received an M. S. degree in 1935.

After four years in Navy electronic work, he was made Radio Material Officer for the Mare Island Navy Yard and the 12th Naval District, where he was responsible for radio station design and construction. Later, while on the staff of Rear Admiral Walter S. Anderson, he had a major role in development of the shipboard radar plot and communications system.

Deputy Chief in Navy.—Mr. Horne was a communications officer in the Pacific area during the war and participated in the historic landings from Tarawa to Okinawa. He was made Deputy Chief of Naval Communications in 1946. While serving in that capacity, his services were requested by the Administrator of Civil Aeronautics to administer the program of modernizing the Federal airways system with the newest electronic aids, and forging it into a common system of maximum benefit to both civil and military aviation.

His responsibility with the CAA has entailed modernization, maintenance and operation of the 70,000 miles of Federal airways, and control of all air traffic along these routes.

Mr. Horne has been Vice Chairman of the Radio Technical Committee for Aeronautics, Chairman of the Air Coordinating Committee's Subcommittee on Aeronautical Communications and Electronic Aids, and Chairman of its Air Traffic Control and Navigational Aids Panel. He was selected to head the U. S. delegation to the International Civil Aviation Organization's Communications Division third session and has been chosen for the same post in the coming session.

Mr. Nyrop was appointed Administrator of Civil Aeronautics in 1950 after 11 years in civil and military aviation. In 1939, he became an attorney for the Civil Aeronautics Authority, remaining with the Civil Aeronautics Board in that capacity when the Authority was reorganized.

Served as Executive Officer.—He was appointed Executive Officer to the Chairman of the Board in 1942 and left later that year to go on duty with the Air Transport Command.

Mr. Nyrop was released from the service in 1946 with the rank of lieutenant colonel and joined the Air Transport Association where he specialized in international policy matters. In 1948, he became Deputy Administrator of the Civil Aeronautics Administration.

Commercial Pilot Written Test Now To Include Radio

A revision of the commercial pilot written examination so as to include questions on fundamental principles and procedures of radio navigation and communication was announced last month by the Civil Aeronautics Administration.

While aware that many applicants for the commercial rating have never flown radio-equipped planes, CAA officials felt that the increasing importance of radio in aviation made it advisable that the commercial pilot have a basic knowledge of the use of radio. In general, they said, such pilots without the ability to utilize radio would be seriously handicapped in many flight situations and the promotion of greater safety justifies inclusion of questions on radio utilization in the written exam.

The questions to be asked in the new issues of the examination will be chiefly concerned with tuning the radio to appropriate frequencies to communicate with ranges and towers for receiving weather information and instructions for landing; use of approved methods and phraseology for com-

(Continued on page 44)

Airman Identification Cards Now Available

Pilots, mechanics and other airmen are urged by the Civil Aeronautics Administration to apply promptly for the identification cards which will be required under proposed amendments of the Civil Air Regulations.

Although the deadline for obtaining the cards is September 1, 1951, the Administrator advises the nation's half-million airmen to avoid delays by early filing of applications at CAA Aviation Safety district offices. The proposed regulation changes provide on and after April 16, 1951, that safety agents will be authorized to issue cards on the spot to airmen who show satisfactory identification and proof of citizenship.

An airman applying for a card should provide the following items:

1. Two identical photographs, approximately one by one inch in size, full face, head only, taken within the 12 months preceding date of application.

2. Proof of identification, such as licenses, or combinations of identification cards and documents which will identify the applicant.

3. Proof of citizenship, place and date of birth, such as birth certificate, baptismal certificate, passport or an airman identification card issued by CAA during World War II.

4. His airman certificate.

The applicant's fingerprint will be placed on both the application form and the identification card.

Applicants who have lost their World War II CAA Identification Card may write the Chief, Airman Records Branch, CAA, Washington 25, D. C., and request a letter verifying that such a card was issued to them. This letter will meet the citizenship, and place and date of birth requirements for obtaining one of the new identification cards.

Higher Skill Requirements Suggested After Private Pilot Accident Studies

Higher skill requirements for applicants seeking private pilot ratings would reduce pilot error accidents, the Civil Aeronautics Administration has concluded following a study of the private pilot accidents.

Increasing indications that too many private flying accidents are caused by lack of aeronautical knowledge or by inadequate training has resulted in four steps by the CAA to remedy the situation, the Administrator said.

These are:

1. An analysis of recommendations submitted by a special CAA committee which made a study of private flying accidents in 1948 and 1949.
2. A study of replies to questionnaires sent 2,500 fixed base operators calling for suggestions.
3. Recommendations to the Civil Aeronautics Board that higher knowledge, experience, and skill requirements be set for applicants seeking private pilot ratings.
4. Preparation of a list of 200 questions and answers for use in future private pilot written examinations.

After studying the 1948-49 private flying accident record, the special CAA committee suggested:

1. Better instruction in pre-flight preparation methods—including the art of learning when to stay on the ground—and better pre-flight information and assistance.
2. More instruction in the techniques of finding one's way, and alternate ways of getting to the destination.
3. Instruction in methods of estimating field size and field condition from the air.
4. Better understanding by pilots of performance characteristics of their planes, especially as to airspeed requirements in various flight situations, field size requirements and best rate-of-climb methods for their planes.
5. Improvements in performance and controllability of private type planes to lessen operational limitations.
6. Development of methods to assist the private pilot in maintaining his proficiency, including research to discover weakness in technique, and refresher courses.

Limitations Ignored.—Certain types of accident causes stand out in the report prepared by a committee headed by Joseph E. Boudwin of the CAA's Engineering Flight Test Branch. Of the 6,920 accidents examined, 846 were caused when pilots landed in insufficient space or in unsuitable area, and 627 when pilots attempted take-off from such places. This, according to the committee, indicates pilots are trying to make their airplanes take them wherever they want to go, and ignoring the limitations both of their planes and landing places.

Collisions with objects in taking off, landing, and taxying took a high toll. Ditches, trees, furrows and fences got in the way and caused 1,856 accidents. Pilots who failed to prepare their flights adequately in advance, or obtained poor weather information, or took along insufficient gas, or failed to find out the condition of the field at their destination, encountered 1,244 accidents. Poor landing technique—always the cause pilots dislike most to hear about—was involved in 2,498 of the 6,920 accidents. Bad navigation caused 706 accidents. In many cases, a combination of causes contributed to the accidents.

Poor Technique Is Factor.—The report points out that stall accidents very often may be ascribed to improper pilot technique, and it found that 1,076 instances of poor technique were contributing causes to accidents studied.

The new requirements in the examination for private pilots now are being circulated by the Civil Aeronautics Board for comment from the industry. All comment thus far received indicates favorable and active interest within the industry for improving the procedures for instructing pilots and checking their proficiency.

Out of its replies from the 2,500 fixed base operators, most of whom engage in pilot instruction, the CAA has prepared a list of 200 questions from which the examination questions for private pilots will be selected. After further analysis of these questions, they will be published in a convenient form for study by applicants.

CAA and CAB Releases

Copies of CAA releases may be obtained from the CAA Office of Aviation Information. CAB releases are obtainable from the Public Information Section of the Board.

Administration

CAA Doctor and Radio Engineer Combine Talents on Heart Testing Machine—(March 5).

Can a Coyote Kill a Pilot in a Plane?—(March 15).

CAA Renews Offer to Inspect Aeronautical Export Items—(March 19).

CAA Announces Additions to its Big Film Library—(March 20).

Big Derbies Are Newest Airway Aids—(March 21).

Alert CAA Communicators Save Pilot Lives and Planes—(March 26).

CAA Trains Foreign Nationals in U. S. Aviation Methods—(March 31).

Changes in Requirements for Private Pilot Certificate Under Study by CAA-CAB—(April 2).

CAA to Issue Identification Cards to all Airmen—(April 4).

Airline Crews May Use Airmen Certificates as Passports—(April 6).

Farmers to Use More Planes in Boosting Production—(April 7).

Board

Part 291 of the Economic Regulations Amended by the Board—(CAB 51-21) (March 7).

CAB Grants Permit to Compania Dominicana de Aviacion, C. Por A.—(CAB 51-22) (March 8).

Board Sets Hearing on Mid-Continent Airlines Fatal Accident at Sioux City, Iowa—(CAB 51-23) (March 12).

Former Senator Chan Gurney Sworn in as CAB Member—(CAB 51-24) (March 12).

CAB Denies Petitions to Reconsider Puerto Rican Decision—(CAB 51-25) (March 19).

CAB Sets Hearing on Mid-Continent Airlines Non-Fatal Accident at Tulsa, Okla.—(CAB 51-26) (March 19).

Board Decides National Route Investigation—(CAB 51-27) (March 19).

CAB Announces Transatlantic Charter Policy and New Charter Regulations—(CAB 51-28) (Mar. 22).

Board Denies Petitions for Reconsideration in Southern Service to the West Case—(CAB 51-29) (March 26).

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DEPARTMENT OF COMMERCE
Charles Sawyer, *Secretary*

Civil Aeronautics Administration
Donald W. Nyrop, *Administrator*

Ben Stern, *Director*
Office of Aviation Information

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Civil Aircraft Shipments Increased During December

Civil aircraft shipments in December 1950 totaled 305 planes, weighing 502,700 airframe pounds, valued at $7,999,000 according to a report issued jointly by the Civil Aeronautics Administration and the Bureau of the Census, Department of Commerce. Comparable figures for December 1949 were 116 aircraft, weighing 584,200 airframe pounds, valued at $14,401,000.

For the year 1950, civil shipments amounted to 3,520 aircraft, weighing 5,924,400 airframe pounds, valued at $100,099,000. For the previous year, the totals were 3,545 aircraft, weighing 6,744,400 airframe pounds, valued at $121,447,000.

The civil transport backlog advanced another 9 planes during December 1950 moving up from 232 to 241. A year ago, the civil transport backlog stood at 83 planes.

Comparative figures on civil aircraft shipments for November and December 1950, as well as for December 1949 follow:

Civil Aircraft Shipments

	1950		1949
	December	November	December
Number (total)	305	242	116
Number by type:			
Personal	291	215	10
Transport	14	27	1
Number by place:			
1- and 2-place	93	64	3
3- to 5-place	198	151	7
Over 5-place	14	27	1
Value (thousand dollars)	$13,495	$19,605	$20,02
Complete aircraft	7,999	15,072	14,40
Parts	2,486	2,622	3,33
Other products	3,010	1,911	2,28

Cross-Country Airway 20 Years Old

The first transcontinental airway to be provided with complete radio beacon service was completed 20 years ago. This pioneer route between New York and San Francisco utilized 21 radio beacons—at least one in each State traversed by the airway. Hourly weather reports by radio telephone and teletype weather reporting service completed the system.

Transatlantic Charter Flights Affected By Board Statement on 1951 Policies

A new policy covering 1951 transatlantic charter services and the issuance of regulations governing such operations was announced late last month by the Civil Aeronautics Board.

In its policy statement the Board said that no further exemptions will be issued to authorize transatlantic charter operations except where the regularly authorized transatlantic carriers (United States or foreign) are unable or unwilling to provide reasonably adequate charter service at established charter rates; the certificated United States transatlantic carriers will be authorized to contract for the equipment and personnel of other air carriers to perform charter service; charter operations will be restricted to the carriage of traffic as set out in the charter regulations; no exemptions will be issued to indirect carriers of passengers; and consideration should be given to the establishment of a low fare for individual passengers on regularly authorized transatlantic service.

The Board's policy for 1951 was formulated after extensive investigation and examination of the results of the 1950 policy of authorizing exemptions to air carriers and indirect air carriers. The Board also held conferences to obtain the facts and the views of interested parties. In its policy statement the Board said that it believes the United States transatlantic air carriers under normal condiions should have no difficulty in providing reasonably adequate transatlantic charter service with their own equipment, except during certain peak traffic periods. These carriers are not expected to invest in new equipment to handle this peak traffic, the Board said, but it believes that they should make equitable arrangements to use the equipment and personnel of other air carriers when additional capacity is needed.

Regulations Issued.—The new charter regulation approved by the Board establishes the general framework under which charter trips and special services by certificated air carriers, in domestic and foreign service, may be encouraged and wasteful competitive practices curtailed. Up to the present time the Board had issued no regulation covering this type of service. However, developments during the past 3 years, particularly in the field of foreign and overseas air transportation, have made it increasingly apparent that some measure of control should be exercised in this field. The new regulation does not apply to nonceritificated irregular carriers. Alaskan air carriers, bona fide non-common carrier operations, nor to other services not in air transportation, such as local sightseeing flights wholly within the boundaries of a single state, territory or possession.

The regul.tion provides, among other things, for the filing of charter tariffs and prescribes limitations on the amount of charter or other special services which may be performed, both in domestic and international service. It further provides that, for 6 months, the limitations shall not apply in connection with charter trips pursuant to contracts with any department of the Military Establishment.

It is hoped, the Board said, that all regularly authorized transatlantic carriers will assume the responsibility of limiting their charter operations to those which meet the standards established in the new regulation. While the Board believes that this policy will foster the sound development of air transportation, it is obvious that if foreign air carriers do not limit their on-route charter services to the carriage of the same type of traffic that the United States transatlantic carriers may transport under the charter regulation, the Board must reconsider its charter policy.

The Board further determined that no air carrier or foreign air carrier shall operate charter service as a device to defeat the purpose of, or to undermine the individual fares established for regular transatlantic travel.

Exemptions to Be Denied.—The Board decided to issue no exemptions to indirect carriers of passengers and stated, "There is no indication that the public interest would be served by intermediary organizations acting as independent contractors between the operators of the aircraft and the general public. The Board's policy, however, will not prevent direct carriers from utilizing their authorized agents to perform any traffic service which such carrier may themselves perform."

Former Senator Chan Gurney Replaces Harold Jones on Board

Chan Gurney, former U. S. Senator from South Dakota, was sworn in last month as a Member of the Civil Aeronautics Board to fill the balance of a 6-year term formerly held by Harold A. Jones, which expires in December 1952. The oath of office was administered by Associate Justice of the Supreme Court, Harold H. Burton, in a brief ceremony before friends and Board officials in the Board Hearing Room.

Mr. Gurney was elected to the U. S. Senate in 1938 and served 12 years. Mr. Gurney began his business career in the family seed and tree business at Yankton, South Dakota, leaving to join the U. S. Army during World War I, in which he served as a Sergeant in the 34th Engineers. After the war he became Secretary-Treasurer of the family company. Subsequently, he was instrumental in building for the company one of the first radio stations in the Northwest, and later established the Chan Gurney Oil Company at Sioux Falls, South Dakota.

While in the U. S. Senate, Mr. Gurney served as a member of the Armed Services and Appropriations Committees and was at one time a member of the Senate Interstate and Foreign Commerce Committee.

Board Decision Stands In Puerto Rico Case

The Civil Aeronautics Board, in an order issued last month, denied petitions for reconsideration of its decision in the *Additional Service to Puerto Rico* case. In this proceeding Eastern Air Lines was authorized to fly from New York to San Juan, Puerto Rico, carrying passengers, property and mail, and Riddle Aviation Company was authorized to fly cargo only between the same points and between Miami, Florida, and San Juan. Petitions protesting the Board's decision and asking reconsideration were filed by Pan American World Airways, Caribbean Atlantic Airlines, Capital Airlines, Trans-Caribbean Airways, and Riddle Aviation Company.

In its order denying the petitions the Board commented on certain allegations in Pan American's petition urging that the Board should have considered in its decision national emergency matters, as well as its policy as outlined in the recently issued *Southern Service to the West* case relating to the award of new routes that would require the paralleling of an existing service.

The Board said that in the *Southern Service to the West* case it had intentionally limited its statements to domestic trunkline routes, and had made no effort to formulate a basic policy for overseas and foreign routes (which were not involved in that proceeding) where considerations not present in domestic cases may strongly influence or even control a particular decision. "It is possible," the Board said, "and indeed likely, that in many instances the factors leading to the domestic policy will also be determinative of overseas and foreign proceedings. However, the Board does not believe that at the present time it should attempt to set forth a general policy governing proceedings like the present one. After carefully considering the peculiar situation of the Island of Puerto Rico, its dependence upon air transportation, its compelling need for adequate air service—particularly low cost service of the type upon which we expect Eastern to concentrate its efforts, the present and potential traffic available to certificated air carriers offering such service, and the improvements in that service which may reasonably be expected to flow from the competitive route, we conclude, on balance, that the temporary award in this proceeding is fully justified under the mandate of the Act and the facts of record. Nor do we find anything resulting from the present national emergency that would lead to a contrary conclusion. While it is true that the record in this case was closed long before the Korean situation arose, Pan American has set forth no new matters in relation to the national emergency of sufficient importance to warrant a change in decision."

Petitions Denied by the Board in the 'Southern Service' Case

The Civil Aeronautics Board last month denied petitions for reconsideration of its decision in the *Southern Service to the West* case. Member Josh Lee dissented from the majority opinion and Members Joseph Adams and Chan Gurney did not participate.

In its original decision, issued on January 30, 1951, the Board denied applications of six airlines for new routes between the southeastern part of the United States and south Texas points; and between points in the Southwest and California. However, the Board provided for a number of through air services by interchange of flight equipment between connecting air carriers now operating in these areas to furnish the necessary improved service between the southeastern and southwestern part of the United States.

The Board stated that after careful consideration, it was of the opinion that the petitions for reconsideration failed to set forth matters sufficient to warrant any change in the Board's decision and consequently denied them all except a portion of Delta Airlines' petition concerning service to Atlanta, Georgia, New Orleans, Louisiana, and Birmingham, Alabama, in Delta's interchange flights with American Airlines. The Board's original order was amended to provide that Delta be permitted to serve Atlanta, New Orleans, and Birmingham on the same interchange flights if the carrier should find this to be desirable.

Petitions were filed protesting the Board's decision by various municipalities and by Delta Airlines, Inc., Eastern Airlines, Inc., National Airlines, Inc., and Pioneer Airlines, Inc.

Official Actions . . . . . Civil Aeronautics Board

Regulations

Amdt. 22–4——————Effective April 6, 1951

Amends Part 22 so as to exempt from the requirements of paragraphs (f), (g), and (h) of section 22.13, an applicant who seeks a free balloon pilot certificate which is limited to the operation of hot-air balloons, and who otherwise meets the requirements of the section. Paragraph (f) requires an applicant to pass an extensive examination on aeronautical matters which include meteorology, navigation and the servicing and operation of airships; under paragraph (g) he must comply with the minimum experience requirements with respect to flight instruction and solo flight time; and paragraph (h) requires him to demonstrate his skill in actual solo flight.

Amdt. 33–4——————Effective March 2, 1951

Amends Part 33 so as to extend to May 1, 1953, the expiration date on all flight radio operator certificates issued prior to February 15, 1950.

Amdt. 26–3——————Effective March 15, 1951

Amends § 26.14 of Part 26 so as to provide for the optional requirement of additional instruction for re-examination applicants.

The Board issued the following explanatory statement of this amendment:

"Currently effective airman Parts of the Civil Air Regulations are not consistent in their requirements for reexamining applicants who have failed to pass the tests required for obtaining airman certificates. Parts 20, 21, 22, 24, 25, 33, and 51 permit an application for re-examination after at least 5 hours of additional instruction in each subject failed, or after the expiration of 30 days from the date of failure. Parts 26, 27, 34, and 35 on the other hand, permit an application for re-examination only after the expiration of 30 days from the date of failure.

"There appears to be no valid reason why the re-examination provisions for all of the airman Parts should not be the same. The alternate requirement of 5 hours of additional instruction was adopted in 1942, consistent with the interests of safety, as a wartime measure to expedite the qualification of certain airmen. The Board now believes that, in view of current military needs, the issuance of airman certificates can be more effectively administered by a uniform requirement which would, in effect, permit an applicant who fails any aeronautical knowledge examination to apply promptly for re-examination by taking special instructions, or otherwise be restricted to applying for re-examination after a lapse of 30 days. Our experience has shown that this option is of substantial value in qualifying applicants expeditiously and without jeopardizing our standards for competence. In the course of this experience, we have received information from numerous interested persons which indicates a general approval of this practice.

"Accordingly, we are amending § 26.14 to make available the optional requirement of additional instruction to applicants for air-traffic control-tower operator certificates. For the same purpose Parts 27, 34, and 35 are being revised concurrently with this amendment."

Amdt. 27–3——————Effective March 15, 1951

Amends § 27.19 of Part 27 so as to provide for the optional requirement of additional instruction for re-examination applicants.

Amdt. 34–3——————Effective March 15, 1951

Amends § 34.13 of Part 34 so as to provide for the optional requirement of additional instruction for re-examination applicants.

Amdt. 35–3——————Effective March 15, 1951

Amends § 35.14 of Part 35 so as to provide for the optional requirement of additional instruction for re-examination applicants.

ER–159——————Effective April 6, 1951

Amendment No. 1 to Part 291 adds a new section 291.27 setting forth the conditions on operating authority and extent of operations by Large Irregular Carriers on exercise of temporary exemption.

SR–361——————Effective March 9, 1951

Authorizes, subject to the approval of the Administrator of Civil Aeronautics, variations generally from the conventional position light system, and the use, in particular, of flash rates with specified frequency cycles per minute in the present system as established in Part 4b. Terminates January 1, 1953.

Safety Orders

S-397 modifies order serial No. S-182 to permit Charles Robert Sisto to pilot executive type aircraft carrying a number of non-fare-paying passengers (January 24).

S-398 terminates proceeding in the matter of Harlin E. Bell (February 8).

Airline Orders

E-5095 grants the Aeronautics Commission of Indiana, and the City and Chamber of Commerce of Muncie, Ind., leave to intervene in the *Indiana-Ohio Local Service* case (February 1)

E-5096 grants the Commonwealth of Massachusetts leave to intervene in the matter of the application of British Overseas Airways Corporation for amendment of its transatlantic foreign air carrier permit so as to include Boston, Mass. (February 1).

E-5097 dismisses application of Resort Airlines for a disclaimer of jurisdiction or an exemption order, and the motions of Eastern Air Lines, Imperial Airways, National Airlines, and Pan American World Airways in the proceeding (February 1).

E-5098 opinion and order approve, subject to express condition, Agreement CAB No. 2392 pursuant to section 412 of the Act in the matter of a Universal Air Travel Plan; terminate proceedings in Dockets Nos. 233, 1939, and 3079 (February 2).

E-5099 dismisses application of Mid-West Airlines for an exemption from the provision of section 401(1) of the Act (February 2).

E-5100 extends to May 13, 1951, the period of suspension of one-way coach fare, and rules, charges and other provisions proposed by National Airlines (February 2).

E-5101 amends order serial No. 4555 to permit Southern Airways to omit a stop at Tuscaloosa, Ala., during the hours of darkness until May 15, 1951, or such time as the Van De Graff Airport is adequate for use by Southern (February 2).

E-5102 orders Empire Air Lines to show cause why the Board should not order the alteration, modification, or amendment of its temporary certificate for route No. 78 so as to extend for 5 years its authority to operate segments 1 and 2 with designated changes; institutes investigation to determine whether the certificate held by United Air Lines for route No. 1 should be suspended for 5 years or less, insofar as it authorizes service to stated points; consolidates Dockets Nos. 3020 and 4699 into a single proceeding to be known as the *Empire Certificate Renewal* case, and assigns it to Docket No. 4852 (February 2).

E-5103 denies application of Empire Air Lines for an exemption from the provisions of section 401 of the Act so as to extend its operations on segment 2 or route No. 78 (February 2).

E-5104 denies motion to consolidate filed by Mid-West Air Lines in the *North Central Route Investigation* case (February 5).

E-5105 denies motion of Eastern Air Lines for certification of the record to the Board for immediate decision in the matter of the application of Modern Air Transport for an exemption (February 5).

E-5106 denies petition of Air Transport Association of America for leave to appear as *amicus curiae* in the matter of mail rates for Inland Air Lines and Western Air Lines (February 5).

E-5107 authorizes Lake Central Airlines to suspend service at Bedford, Ind., until the Bedford Municipal Airport facilities are adequate for use by Lake Central in scheduled air carrier operations, or until 60 days after final determination by the Board in the *Indiana-Ohio Local Service* case (February 5).

E-5108 denies petition of the City of Oakland, Calif., for leave to intervene in the matter of the West Coast passenger fare structure (February 5).

E-5109 grants the Department of Aeronautics, Commonwealth of Kentucky, and National Airlines leave to intervene, and amends order serial No. E-4876 in the matter of the renewal of the temporary certificate held by Piedmont Aviation for route No. 87, and the amendment of Capital Airlines' certificate for route No. 51 (February 5).

E-5110 opinion and order in the *Trans-Texas Certificate Renewal* case amend temporary certificate of Trans-Texas Airways for route No. 82, and of Pioneer Air Lines for route No. 64, said amended certificates to be effective on April 6, 1951; otherwise dismisses and denies (February 5).

E-5111 orders Northern Consolidated Airlines to show cause why the Board should not fix certain temporary mail rates over its Fairbanks-Bethel route (February 6).

E-5112 assigns for public hearing before an examiner of the Board the application of Northwest Airlines for authority to suspend service temporarily at Jamestown, N. Dak., or to eliminate said point from the certificate for route No. 3; otherwise denies (February 12).

E-5113 assigns for public hearing before an examiner of the Board the applications of Northwest Airlines for authority to suspend service temporarily at Bozeman and Kalispell, Montana; otherwise denies (February 12).

E-5114 authorizes Central Airlines to inaugurate service immediately at Ardmore, Okla., on route No. 81 (February 12).

E-5115 denies Los Angeles Air Service exemption which would permit it to engage in certain air transportation as authorized by Part 291; terminates temporary exemption; denies requests of various air carriers (February 12).

E-5116 grants Riddle Aviation Company exemption for 6 months from the provisions of section 401(a) of the Act and Part 295 so as to permit it to engage in interstate, overseas, and foreign air transportation of persons and property pursuant to contracts with any department of the Military Establishment (February 13).

E-5117 institutes investigation and suspends service from February 15, 1951, to May 15, 1951, in the matter of the complaint of Bohrer Air Freight Co., and the Airport Package Service with respect to proposed change in tariff rule filed on behalf of 12 air carriers (February 14).

E-5118 rescinds approval previously granted to Agreement CAB No. 3735 providing for the elimination of advance charges for certain air lines to local cartage operators at New York, N. Y., and Newark, N. J. (February 14).

E-5119 grants National Airlines, Pan American-Grace Airways, and Pan American World Airways leave to intervene in the matter of the application of Lineas Aereas Nacionales, S. A., for a foreign air carrier permit (February 14).

E-5120 grants the City, and the Chamber of Commerce of Dubuque, Iowa, the City of Beloit, City of Janesville, and the Rock County Airport Committee, Wisconsin, leave to intervene in the *North Central Route Investigation* case (February 14).

E-5121 grants Delta Air Lines leave to intervene in the matter of the *DC-6 Daylight Coach and the Summer Excursion Fares* case (February 14).

E-5122 suspends, effective March 2, 1951, except as otherwise provided, the letters of registration of certain Large Irregular Carriers (February 14).

E-5123 fixes and determines final mail rates for Wisconsin Central Airlines over its entire system (February 15).

E-5124 opinion and order cancel the certificate issued by order serial No. 2062, and authorize Jack R. Peck and Wyman R. Rice d/b/a Peck and Rice Airways to abandon all their routes. Approved by the President February 14 (January 10).

E-5125 opinion and order amend certificate of Alaska Coastal Airlines so as to delete Berners Bay and Gypsum, Alaska, from its regular routes. Approved by the President February 14 (February 15).

E-5126 authorizes Southern Airways to suspend service at Orangeburg, and Rock Hill, S. C., and Tupelo, Miss., until such time as airports at these points are made available for scheduled air carrier operations (February 12).

E-5127 dismisses application of Ozark Airlines for permission to omit flights to Keokuk-Fort Madison, Iowa, on certain flights (February 15).

E-5128 approves, subject to stated conditions, Agreement CAB Nos. 5010 R 1-14 between Pan American World Airways and various other air carriers relating to free and reduced fare transportation (February 15).

E-5129 opinion in the *Reopened Cuba-Florida Air Carrier Permit* case amend foreign air carrier permit of Expreso Aereo Inter-Americano, S. A., so as to extend its effectiveness to April 4, 1954. Approved by the President February 15 (February 8).

E-5130 opinion and order in the *American Airlines, Inc., Los Angeles-San Francisco Cargo* case amend certificate of American Airlines for route No. 4 (February 15).

E-5131 opinion and order amend certificate of Capital Airlines for route No. 14 (February 15).

E-5132 grants Capitol Airways exemption until March 1, 1951, from the provisions of section 401 of the Act so as to permit it to operate one round-trip flight between St. Louis, Mo., and Mexico City, Mexico, carrying a group of students (February 15).

E-5133 authorizes Wisconsin Central Airlines to suspend service at Ironwood, Mich., on segment 2 of route No. 86 until such time as adequate airport facilities are available (February 16).

E-5134 denies petition of Grants Pass and Josephine County Chamber of Commerce for cancellation of order denying leave to intervene in the matter of the West Coast passenger fare structure (February 16).

E-5135 grants the City of Indianapolis, Ind., and the Indianapolis Chamber of Commerce leave to intervene in the *Indiana-Ohio Local Service* case (February 16).

E-5136 institutes investigation, suspends and defers use from February 21, 1951, to May 21, 1951, of Standard Air Cargo's proposed tax-exempt round-trip fares, rules and regulations for military personnel under stated circumstances (February 16).

E-5137 grants the Unit Export Company exemption for 2 years from the provisions of sections 401(a), 404(a), and 405(e) of the Act, subject to stated terms, conditions, and limitations, insofar as said provisions would otherwise prevent Unit from engaging in interstate and foreign air transportation of property only; terminates temporary exemption granted by section 291; otherwise denies (February 16).

E-5138 denies World Airways exemption which would permit it to engage in certain air transportation as authorized by Part 291; terminates temporary exemption; denies requests of various air carriers (February 16).

E-5139 amends certificate of Colonial Airlines for route No. 71 so as to redesignate the point Allentown-Bethlehem, Pa., as Allentown-Bethlehem-Easton, Pa. (February 19).

E-5140 denies joint petition of Porter County, Ind., and the Valparaiso Chamber of Commerce for leave to intervene in the *Indiana-Ohio Local Service* case (February 19).

E-5141 extends for 6 months the period during which Atlas Corporation was directed by order serial No. E-3463 to dispose of certain stock of Northeast Airlines owned by it (February 19).

E-5142 dismisses the proceeding of the investigation and suspension in the matter of the fares proposed by Air Transport Associates (February 20).

E-5143 grants American Airlines exemption to February 24, 1953, from the provisions of section 401 (a) of the Act insofar as they would otherwise prevent it from engaging in certain air transportation on routes Nos. 4, 7, and 25 through the use of the Westchester County Airport; orders that American shall not serve New York, N. Y., on these routes until further finding by the Board (February 20).

E-5144 dismisses petition of Eastern Air Lines for reconsideration in the matter of the application of Midet Aviation Corporation for an exemption under section 416 (b) of the Act (February 21).

E-5145 denies petition of Pacific Alaska Air Express for reconsideration in the matter of its application for an exemption; terminates, effective March 23, 1951, temporary exemption granted by section 291.16 (February 21).

E-5146 grants Air Transport Association of America 20 days in which to file brief in the matter of mail rates for Inland Air Lines and Western Air Lines (February 23).

E-5147 opinion and order suspend, effective March 6, 1951, Letter of Registration No. 142 of Oxnard Sky Freight during the pendency of proceedings in this Docket, or until further order of the Board; order Oxnard, its successors, and assigns to cease and desist engaging directly or indirectly in air transportation in violation of section 401 (a) of the Act (February 27).

E-5148 fixes certain temporary mail rates for Northern Consolidated Airlines over its Fairbanks-Bethel route (February 27).

E-5149 amends order serial No. E-3369 to include approval of interlocking relationships between Railway Express Agency and The Lehigh and Hudson River Railway Company, and National Carloading Corporation (February 27).

E-5150 amends order serial No. 1618 to include approval of interlocking relationships between Railway Express Agency and Mississippi Valley Transportation Company (February 27).

E-5151 denies petition of Chicago and Southern Air Lines, the Minneapolis-St. Paul Metropolitan Airports commission, and Continental Air Lines for leave to intervene in, and for reconsideration of, the *Through Service Proceeding and Kansas City-Memphis-Florida* case (February 27).

E-5152 closes record in the Through Service Proceeding; allows parties 10 days from date of order to file certain statements (February 27).

E-5153 opinion and order amend certificates of Trans World Airlines for route No. 2 so as to eliminate Columbia, Mo. (February 27).

Crash on Take-Off.—The failure of a fitting in a hydraulic line was the probable cause of the Northwest Airlines accident at Billings, Montana, on September 4, 1950, the Civil Aeronautics Board said in a report issued recently.

The aircraft, operating on a scheduled flight destined for Seattle, Washington, and carrying 16 passengers and a crew of three, crashed during take-off from the Billings Municipal Airport.

Aircraft damage was confined to the right wheel assembly, the right wing and engine nacelle, and propeller blades. None of the passengers or crew were injured.

The flight departed on schedule from Minneapolis, Minnesota. No difficulty was experienced during the first segment of the trip to Billings, where a routine change of crew was made. The incoming captain reported the aircraft to be mechanically all right for the remainder of the trip.

Preparatory to taking off from the Billings airport, the aircraft was parked at the end of the 6,000-foot runway where a "before take-off check" was completed.

The flight was cleared for take-off, throttles were advanced, but before the aircraft had rolled far, blue smoke was noticed between the rudder pedals on the left side of the cockpit. When the plane had progressed about one-third of the way down the runway, and it had accelerated to an air speed of 80 miles an hour, a large puff of blue smoke suddenly filled the cockpit. Accompanying it was a sharp odor of burning. Throttles were retarded and brakes applied, but the brakes were effective only momentarily. There was only slight deceleration and the aircraft continued with speed unchecked toward the end of the runway.

As soon as it became apparent that the brakes were useless, full reverse thrust was applied and an attempt was made to steer the aircraft by the nose wheel. However, the nose wheel control was totally ineffective and it was then observed that the hydraulic pressure in the main and emergency systems had dropped to zero.

As the plane progressed over the runway, it turned slightly to the left and went off the paved area about 1,075 feet from the end of the runway. Since the ground was hard and dry, no appreciable loss of speed resulted from leaving the runway.

By application of reverse thrust the aircraft was slowed to about 15 miles per hour and at this reduced speed the aircraft continued to roll toward the northeast boundary of the field where the ground level dropped sharply in a bluff. In anticipation of rolling over this bluff, the crew turned off all electrical switches and fuel valves. Before the aircraft reached the bluff, however, it struck a cement culvert and light standard. As a result, the right main landing gear failed to the rear which permitted the right wing to touch ground. This turned the aircraft slightly to the right and brought it to a full stop.

All passengers left the aircraft through the forward cargo door and the emergency exits. The main cabin door and ramp could not be lowered, since the tail section of the aircraft where the ramp is located was resting on the ground. No one received any injuries and there was no fire.

Investigation of the aircraft after the crash disclosed a considerable amount of hydraulic fluid in the nose wheel compartment, and this was traced to a separation of the tubing from the reducer fitting in the hydraulic line from the emergency accumulator to the emergency pressure gauge in the cockpit.

In this plane, the emergency accumulator is charged from the same line which supplies the main accumulator. The two accumulators are separated by a check valve which prevents the fluid from returning from the emergency system. The fitting which failed in this case was located in the line between the emergency accumulator and the emergency power brake valve. When the failure occurred fluid from the main accumulator flowed through the check valve into the emergency accumulator and from there out of the open line where the fitting was located. As a result, all pressure was lost from both accumulators, and neither the brakes nor the hydraulic nose wheel steering mechanism could be actuated.

Northwest's maintenance manual, which includes detailed instructions for installing the type of fitting involved, provides for tightening of the parts so as to collapse a metal sleeve around the end of the tube or line to be joined. When the work is properly done the sleeve actually cuts into the tubing and, in effect, becomes a part of it. Examination of the failed fitting in this case showed that the sleeve had not cut into the tubing. As a result, the necessary holding power of the fitting was never obtained when it was installed.

It is apparent from the facts that this accident occurred as a result of an improperly installed fitting, the Board said. Because the fitting was not properly installed, it separated; and the separation permitted all pressure in the main and emergency hydraulic systems to escape.

Crashed Into Lake.—The probable cause of the Northwest Airlines accident that claimed 58 lives when the scheduled airliner crashed into Lake Michigan near Benton Harbor, Michigan, on June 23, 1950, could not be determined because of the insufficiency of evidence, the Board said in a report issued recently.

The flight, which was scheduled to operate between New York, N. Y., and Seattle, Wash., with Minneapolis, Minn., and Spokane, Wash., as intermediate points, departed from LaGuardia Airport with 55 passengers and a crew of three. Robert C. Lind, an experienced multi-engine aircraft pilot, was in command.

Investigation disclosed that the aircraft, a converted C-54A, was airworthy at the time of the flight. Prior to take-off, the crew was thoroughly briefed regarding the en route and terminal weather, which included a forecast of thunderstorm activity and the possible development of a squall line.

The flight plan filed with Air Route Traffic Control specified a cruising altitude of 6,000 feet to Minneapolis. An altitude of 4,000 feet had been originally requested but was denied by traffic control because of other traffic assigned to that level.

When over Cleveland, Ohio, a cruising altitude of 4,000 feet was requested and approved. Forty minutes later the flight was requested by traffic control to descend to 3,500 feet because of an eastbound flight at 5,000 feet over Lake Michigan experiencing severe turbulence and difficulty in maintaining its assigned altitude. When in the vicinity of Benton Harbor the flight requested a cruising altitude of 2,500 feet and was refused by traffic control because of other traffic in the area. No reason was given for the request. The refusal to approve the lower altitude was acknowledged and this was the last communication received from the flight.

When overdue at Milwaukee, attempts to contact the flight were made by CAA radio stations in the area. Shortly thereafter the air-sea rescue facilities in the area were alerted.

An intensive search of the Lake Michigan area was started at daylight June 24. On the following day a United States Coast Guard cutter found an oil slick, aircraft debris, and the aircraft log book in Lake Michigan approximately 18 miles north-northwest of Benton Harbor.

Underwater search operations were conducted with divers and sonar equipment. At the locations searched, the lake bottom was 150 feet below the surface of the water, and was covered with silt and mud estimated to be 30 to 40 feet deep.

In addition to the diving operations, the entire area was dragged with grapnel but without results.

After 2 days of operations, the underwater operations were suspended because of the difficult conditions and the failure to find anything that would indicate that the aircraft could be recovered.

The only parts of the aircraft recovered were those of sufficient buoyancy to float, such as cushions blankets, clothing, etc., and floatable items that had been sheared from the aircraft on impact.

Impact damage found in fragments of the aircraft that were recovered showed that the aircraft struck the water with considerable force. Since the aircraft entered an area where there was severe turbulence and that it crashed shortly afterward, it is indicative, said the Board, that the accident probably resulted from either a structural failure caused by the turbulence or because control of the aircraft was lost. However, there is no evidence upon which a determination can be made as to which of these two possibilities actually caused the accident, the Board said.

Suspensions

Recent initial decisions by Civil Aeronautics Board examiners suspending certificates include the following:

Commercial pilot certificate of Robert E. Brooks, Richmond, Ind., suspended 60 days from November 12 for failing to familiarize himself with information necessary to his intended flight. The pilot, while carrying three passengers, attempted to take off from a short, up-graded sod field, failed to clear a wire fence at the end of the field, and crashed.

Private pilot certificate of John Anderson, Hasbrouck, N. J., suspended 60 days from September 19 for using unauthorized written notes while taking an examination for a commercial pilot certificate.

Private pilot certificate of Eli B. Springs, Jr., Matthews, N. C., suspended until November 22 for low flying in the vicinity of the Island Point Club, near Charlotte, N. C.

Commercial pilot certificate of Edwin B. Lee, Chester, S. C., suspended 30 days from December 2 for operating an aircraft in a careless manner during practice dusting runs near Chester. During one of the runs the pilot pulled up too late and the aircraft hit a tree. The pilot was able to keep the aircraft in the air and fly it back to the airport.

Private pilot certificate of Byron E. Christiansen, Ogden, Utah, suspended 6 months from October 27 for failing to familiarize himself with the information necessary to complete his intended flight and for operating an aircraft in a careless and reckless manner. On a flight from Ogden to Malad City, Idaho, the pilot became lost and landed at Malta, Utah. He was unable to take off from the field due to its muddy condition and while attempting to take off from a nearby road, he ran through a mud hole and crashed.

Private pilot certificate of Owen A. Hardman, Kamish, Idaho, suspended 30 days from October 27 for failing to familiarize himself with available information pertinent to his intended operations which resulted in the operation of an aircraft without position lights after the hours of darkness.

Private pilot certificate of Ralph E. Ponte, Tenino, Wash., suspended 60 days from October 27 for low flying over the congested residential area of Corvallis, Ore.

Student pilot certificate of Eugene Peter Stecks, Pine Bluffs, Wyo., suspended 6 months from November 15 for operating an aircraft of a type not endorsed on his certificate and when the aircraft had not been given an annual inspection.

Private pilot certificate of Gerald Bader, Jr., Santa Rosa, Calif., suspended 6 months from August 11 for low flying in formation with another aircraft in the vicinity of Santa Rosa and for performing acrobatic maneuvers at a low altitude.

Private pilot certificate of Bertill V. Fagerness, Talkeetna, Alaska, suspended 30 days from September 23 for piloting an aircraft for hire.

Private pilot certificate of Milton Lee Hoagland, Pueblo, Colo., suspended 60 days from November 30 for low flying over the main street of Westcliff, Colo. at a time when a rodeo parade was in progress.

Private pilot certificate of Ernest Merrill, Bath, N. Y., suspended 90 days from December 1 for operating an aircraft at a low altitude in the vicinity of the B & H Airport, Hammondsport, N. Y., and for failing to conform to the traffic pattern for the airport.

Private pilot certificate of James Leroy McDonald, Buffalo, N. Y., suspended 90 days from December 1 for operating an aircraft that had not been given an annual inspection in the preceding 12 months and for carrying a passenger in violation of the terms of a ferry permit.

Private pilot certificate of George Allen Pettengill, China Lake, Calif., suspended 60 days from December 2 for operating an aircraft during instrument weather when he did not possess an instrument rating and for flying closer to the ground and to cloud formations than the minimum distances permitted. The

(Continued on page 42)

Regulations of The Administrator

Through April 1, 1951

Note: Regulations of the Administrator marked with an asterisk (*) on the list given below may be obtained from the Superintendent of Documents, United States Government Printing Office, Washington 25, D. C., at the prices indicated. Remit check or money order, made payable to the Superintendent of Documents, directly to the Government Printing Office. Copies of amendments may be obtained free of charge from the Office of Aviation Information, CAA, Washington 25, D. C., or may be found in the Federal Register for the dates indicated in parentheses. Copies of the Federal Register are obtainable from the Superintendent of Documents.

Procedures

*Part 405—General Procedures. (5¢.)
*Part 406—Certification Procedures. (10¢.)
*Part 407—Recordation Procedures. (5¢.)
*Part 408—Enforcement Procedures. (5¢.)

Rules

Airmen

*Part 450—Inter-American Aviation Training Grants. (5¢.)

Aircraft

*Part 501—Aircraft Registration Certificates. (5¢.)
*Part 502—Dealers' Aircraft Registration Certificates. (5¢.)
*Part 503—Recordation of Aircraft Ownership. (5¢.)
*Part 504—Recordation of Encumbrances Against Specifically Identified Aircraft Engines. (5¢.)
*Part 505—Recordation of Encumbrances Against Aircraft Engines, Propellers, Appliances, or Spare Parts. (5¢.)
Part 514—Technical Standard Orders — C Series — Aircraft Components. (January 25.)

Airports

*Part 550—Federal Aid to Public Agencies for Development of Public Airports. (10¢.)
(Amendments 1-14 available from CAA.)
*Part 555—Acquisition of Government-owned Lands for Public Airport Purposes. (5¢.)
*Part 560—Reimbursement for Damage to Public Airports by Federal Agencies. (10¢.)
(Amendment 1 available from CAA.)
*Part 570—Rules of Washington National Airport. (5¢.)
(Amendment 1 available from CAA.) Amendment 2 (March 28, 1951).
*Part 575—Federal Civil Airports on Canton and Wake Islands. (5¢.)

Air Navigation

*Part 600—Designation of Civil Airways (including amendments 1 through 18). (15¢.)
(Amendments 19-44 available from CAA.)
*Part 601—Designation of Control Areas, Control Zones and Reporting Points (including amendments 1 through 22). (15¢.)
(Amendments 23-47 available from CAA.)
*Part 612—Aeronautical Fixed Communications. (5¢.)
*Part 620—Security Control of Air Traffic. (5¢.)
Amendment 1 (February 15, 1951).
*Part 625—Notice of Construction or Alteration. (5¢.)

Miscellaneous

Part 635—Reproduction and Dissemination of Current Examination Materials. (Available without charge from CAA.)

Suspensions

(Continued from page 41)

flight ended when the pilot made a forced landing on a public golf course in the vicinity of Somerville, N. J., crashing into two parked cars.

Commercial pilot certificate of Abner L. Camp, Jr., Atlanta, Ga., suspended 4 months from January 1 for operating an aircraft after the hours of darkness without displaying position lights.

Private pilot certificate of Willis Emory Tippin, Jr., Mobile, Ala., suspended until April 26 for low flying and performing acrobatics over the congested area of Warrington, Fla., and for performing acrobatics when the passenger was not equipped with a parachute.

Private pilot certificate of Ralph M. Percy, Elizabeth City, N. C., suspended 60 days from December 6 for failing to adhere to the traffic pattern for the Goldsboro Municipal Airport, Goldsboro, N. C., while operating an aircraft in the area of the field.

Private pilot certificate of Donald McLean, Chicago, Ill., suspended 30 days from December 23 for operating an aircraft within a control zone and landing the aircraft at the Municipal Airport, Duluth, Minn., when the ceiling was below VFR minimums, without receiving authorization from traffic control.

Private pilot certificate of Robert Simmons, Columbus, Ohio, suspended 60 days from December 23 for failing to observe the traffic pattern for the Northway Airpark, Columbus, Ohio.

Private pilot certificate of D. M. Henderson, Riverdale, N. Dak., suspended 30 days from December 31 for low flying over the congested area of Riverdale.

Air Regulations . . . . April 1, 1951

TITLE	No.	Price	Date	Number of Amendments	Applicable Special Regulations
AIRCRAFT					
Certification, Identification, and Marking of Aircraft and Related Products	1	$0.05	1/15/51	.....	.....
Airplane Airworthiness Normal, Utility, Acrobatic, and Restricted Purpose Categories	[1] 3	.15	11/ 1/49	4	SR-358,360
Airplane Airworthiness	4a	.20	4/ 7/50	.....	SR-358,360
Airplane Airworthiness Transport Categories	[1] 4b	.25	7/20/50	3	SR-358,360 361
Rotorcraft Airworthiness	6	.10	1/15/51	.....	SR-358,360
Aircraft Airworthiness; Restricted Category	8	.05	10/11/50	.....	.....
Aircraft Airworthiness; Limited Category	9	.05	11/ 1149	1	.....
Aircraft Engine Airworthiness	13	.05	8/ 1/49	2	SR-358
Aircraft Propeller Airworthiness	14	.05	11/ 1/49	2	SR-358
Aircraft Equipment Airworthiness	15	.05	11/ 1/49	3	SR-358,360
Aircraft Radio Equipment Airworthiness	16	.05	2/13/41	.....	.....
Maintenance, Repair and Alteration of Certificated Aircraft and of Aircraft Engines Propellers and Instruments	18	.05	8/15/49	.....	.....
AIRMEN					
Pilot Certificates	20	.05	8/ 1/49	6	.....
Airline Transport Pilot Rating	21	.05	8/15/49	2	.....
Lighter-than-air Pilot Certificates	22	.05	11/ 1/49	4	.....
Mechanic Certificates	24	.05	9/ 1/49	3	SR-348
Parachute Riggers Certificates	25	.05	9/ 5/50	.....	.....
Air-traffic Control-tower Operator Certificates	26	.05	11/ 1/49	3	.....
Aircraft Dispatcher Certificates	27	.05	11/ 1/49	3	.....
Physical Standards for Airmen	29	.05	10/ 1/49	2	.....
Flight Radio Operator Certificates	33	.05	2/15/50	4	.....
Flight Navigator Certificates	34	.05	11/ 1/49	3	.....
Flight Engineer Certificates	35	.05	11/ 1/49	3	.....
OPERATION RULES					
Air Carrier Operating Certification	40	.05	9/ 1/49	.....	SR-346, 349, 351, 353, 356
Certificate and Operation Rules for Scheduled Air Carrier Operations Outside the Continental Limits of the United States	41	.05	11/15/49	3	SR-349, 356, 360
Irregular Air Carrier and Off-Route Rules	42	.10	6/ 1/49	6	SR-337, 349, 350, 360
General Operation Rules	43	.05	8/ 1/49	5	SR-360
Foreign Air Carrier Regulations	44	.05	9/ 1/49	.....	.....
Commercial Operator Certification and Operation Rules	45	.05	11/15/49	1	SR-337, 349, 356
Operation of Moored Baloons	48	.05	9/ 1/49	.....	.....
Transportation of Explosives and Other Dangerous Articles	49	.10	7/20/49	.....	.....
AIR AGENCIES					
Airman Agency Certificates	50	.05	10/ 1/49	2	SR-354,355
Ground Instructor Rating	51	.05	10/10/49	1	.....
Repair Station Rating	52	.05	10/15/49	.....	.....
Mechanic School Rating	53	.05	10/15/49	.....	.....
Parachute Loft Certificates and Ratings	54	.05	10/15/49	1	.....
AIR NAVIGATION					
Air Traffic Rules	60	.10	8/ 1/49	.....	.....
Scheduled Air Carrier Rules	61	.10	9/ 1/49	3	SR-346, 349, 350, 356, 360
Notice and Reports of Aircraft Accidents and Missing Aircraft	62	.05	5/ 1/49		.....

[1] Certain aircraft may comply with the provisions of this Part or Part 4a.

NOTE: Civil Air Regulations are on sale at the prices indicated by the Superintendent of Documents, Government Printing Office, Washington 25, D. C. Remittances should be by check or money order, payable to the Superintendent. Amendments and special regulations may be obtained from the publications Section, Civil Aeronautics Board, Washington 25, D. C.

CAA Manuals and Supplements . . . April 1, 1951

TITLE	No.	Price	Date	No. of Supplements	Amending Release
Production Certificates	02	$0.10	8/ 1/46	.....	.....
Airplane Airworthiness; Normal, Utility, Acrobatic, and Restricted Purpose Categories	3	Free	.....	6	.....
Airplane Airworthiness	04	.75	7/ 1/44	.....	Nos. 193, 202
Airplane Airworthiness; Transport Categories	4b	Free	.....	5	.....
Aircraft Propeller Airworthiness	14	.20	5/ 1/46	.....	.....
Aircraft Equipment Airworthiness	15	.....	.....	.....	(Being revised)
Aircraft Radio Equipment Airworthiness	16	Free	2/13/41	.....	Nos. 62, 272
Maintenance, Repair, and Alteration of Certificated Aircraft, Engines, Propellers, and Instruments	18	1.25	8/ 1/49	.....	.....
Pilot Certificates	20	Free	6/16/50	1	.....
Air-Traffic Control-Tower Operator Certificates	26	Free	.....	3	.....
Aircraft-Dispatcher Certificates	27	Free	.....	2	.....
Flight Radio Operator Certificates	33	Free	6/16/50	1	.....
Flight Navigator Certificates	34	Free	.....	1	.....
Flight Engineer Certificates	35	Free	1/ 2/51	1	.....
Air Carrier Operating Certification	40	Free	.....	3	.....
Certification and Operation Rules for Scheduled Air Carrier Operations Outside the Continental Limits of the United States	41	Free	.....	12	.....
Irregular Air Carrier Certification and Operation Rules	42	1.00	9/ 1/49	2	.....
General Operation Rules	43	Free	.....	2	.....
Airmen Agency Certificates	50	.15	5/15/46	4	No. 254
Repair Station Rating	52	Free	.....	1	.....
Mechanic School Rating	53	Free	5/—/40	.....	.....
Parachute Loft Certificates and Ratings	54	.15	7/ 1/48	.....	.....
Instrument Approach Procedure	60	Free	.....	5	.....
Scheduled Air Carrier Rules	61	Free	.....	8	.....

NOTE: Manuals for which a price is listed may be obtained from the Superintendent of Documents, U. S. Government Printing Office, Washington 25, D. C. Remittances should be by check or money order, payable to the Superintendent. Items marked "free" may be obtained from the CAA Office of Aviation Information, Department of Commerce, Washington 25, D. C.

CAA Makes Available Aircraft Owner Lists

Listings, by States, of aircraft owners will be made available by the Civil Aeronautics Administration at a rate of $4 a thousand names, under a new plan which went into effect March 31.

On that date, lists will be ready for Alabama, Arizona, Arkansas, and outlying districts such as Alaska. Each month thereafter, additional state lists will be available in alphabetical order of States, with the final group to be completed in January, 1952.

If the arrangement proves satisfactory, the cycle then will be repeated. Thus, no State list will be more than 10 months old.

The plan is a new approach to a problem that has plagued CAA and the aviation industry for many years. Before World War II, the Aeronautical Chamber of Commerce sold a nationwide list of aircraft owners, compiled by them from CAA records. After the war, the Aircraft Industries Association, successor organization to the Chamber, decided not to continue this arrangement.

Until recently, persons requesting lists were referred to tabulating companies which would contract to make special runs from CAA cards. Financial, legal and work-scheduling problems caused the companies and CAA to abandon this procedure.

The new program will permit CAA to run the lists without imposing any heavy additional workload, and will make them available at a cost acceptable to those with legitimate need for them.

The lists will cover only the owners of the 60,000 certificated aircraft. The question of how to make available useful lists of the 500,000 or more persons to whom pilot certificates have been issued is still under study.

Information concerning the order in which the State lists will be prepared and the target dates for completion is available from the Office of Aviation Information.

December Engine Shipments Bring Yearly Total to 4,315

December shipments of civil aircraft engines brought the 1950 totals to 4,315 engines, representing 1,646,000 horsepower, valued at $20,058,000, according to reports issued jointly by the Civil Aeronautics Administration and the Bureau of the Census, Department of Commerce. For the year 1949, comparable figures were 3,982 engines, representing 1,231,500 horsepower, valued at $14,237,000.

During December 1950, the civil aircraft engine industry shipped 365 engines, representing 191,300 horsepower, valued at $2,627,000. Total dollar value —complete aircraft engines, spare parts, and all other products and services—amounted to $6,677,000 in December, an increase of $2,131,000 over December 1949.

Comparative figures on December civil aircraft engine shipments follow:

Civil Aircraft Engine Shipments

	1950		1949
	December	November	December
Number (total)	365	350	168
Horsepower (thousands)	191.3	144.4	123.4
Value (thousand dollars)	$6,677	$5,532	$4,546
Complete engines	2,627	1,840	1,662
Parts	3,890	3,562	2,533
Other products	160	130	351

CAM Supplements and Aviation Safety Releases

(Issued between February 15, 1951, and March 16, 1951, and obtainable from the CAA Office of Aviation Information, Department of Commerce, Washington 25, D. C.)

CAM Supplements

CAM No.	Supplement No.	Date	Title
3	8	.....	Correction to 3.388-1.
8	1	.....	Correction to CAM 8.

Aviation Safety Releases

No.	Date	Subject
341	3/ 7/51	Aircrewman Identification Card as Travel Document for International Air Crew Members.
342	3/16/51	Questions on Radio to be Added to the Commercial Pilot Written Examination.

CAA Proposes Part 3 Revision to Simplify Design Requirements

Proposed simplification of Civil Air Regulations dealing with personal aircraft design may permit manufacturers to make important savings in critical manpower, officials of the Civil Aeronautics Administration said recently.

The revisions have been developed by CAA's Office of Aviation Safety, for submission to the Civil Aeronautics Board's annual review of airworthiness regulations.

The suggested simplification of aircraft strength requirements reflect the considerable experience acquired by the industry and the CAA in the field of aircraft airworthiness since the adoption of the revised Part 3 in 1946 as well as an important step in the CAA's program of turning over to the industry the job of regulating itself.

The job of going over Part 3 and reducing it to the simplest terms possible was given the CAA as a result of discussions in the 1950 annual review of airworthiness parts of the Civil Air Regulations, conducted by the Bureau of Safety Regulation of the CAB.

In addition to eliminating obsolete and unnecessary requirements and those not affecting safety, it is proposed to modify the Part 3 strength requirements to:

1. Facilitate shifting from one category to another.
2. Reduce the number of design flight conditions.
3. Limit the scope of the Part to the design of personal type aircraft.
4. Simplify ground load requirements.

While retaining the present level of safety, the proposals will eliminate unnecessary engineering work, according to E. S. Hensley, Director of the CAA's Office of Aviation Safety.

CAA Film Catalogue Features New Titles

New instructive and informative films on aviation are featured in the 1951 catalogue of films and film strips distributed by the Civil Aeronautics Administration, publication of which was recently announced.

"Safe Airmen" and "Safe Flight Operations" are two films recently completed by the CAA and ready for showing to any groups interested in the nation's civil flying activities. These are two of a series of five pictures on the general subject, the others being "A Plane Is Born" and "Safe Aircraft," with "Safety in Aviation" soon to be released.

Two other categories of new material prepared by CAA are listed in the new catalogue. The first is a series of five silent and six sound film strips for use by teacher training institutions. These strips introduce the subject of aviation to faculties which have not included it in their curricula, and assist both beginner teachers and those who have had experience in aviation education. A strip describing teaching theory and another showing actual classroom operation are included.

The second is a film strip especially interesting to prospective users of aircraft, called "Uses of Aircraft," and showing a wide variety of uses, particularly by farmers.

All films distributed by the CAA are free, the only expense to borrowers is the transportation cost. Last year some 2,500,000 persons saw CAA films—25,000 loans were made for 50,000 showings.

The catalogue is free and can be obtained from the Office of Aviation Information, CAA, Washington. Films are distributed by CAA's Aviation Education Division in Washington and from the seven CAA regional headquarters in continental United States.

'50 Propeller Industry's Output Shows Slight Increase Over 1949

The aircraft propeller industry's total output in 1950 was valued at $78,371,000, an increase of $11,519,000 or 17 percent over 1949, according to a report issued jointly by the Civil Aeronautics Administration and the Bureau of the Census, Department of Commerce. The dollar value was distributed as follows: complete propellers, $43,479,000; spare parts, $20,712,000; all other products and services, $14,180,000. Shipments to the military services accounted for 68 percent of the total value of output, civil shipments 14 percent, and other products and services 18 percent.

Shipments of propellers for civilian use totaled 10,413, valued at $5,664,000, for an average unit value of $544. Comparable figures for 1949 were 11,343 propellers, valued at $6,081,000, or an average of $536 per propeller. The peak month was April with 1,082 propellers, and January was the low month with only 613.

Employment in aircraft propeller plants in 1950 varied only slightly until the last four months when payrolls began to climb steadily. A peak of 9,489 employees was reached in December, an increase of 1,112 workers, or 13 percent over the December 1949 figure.

Civil aircraft propeller shipments by month for 1949 and 1950 follow:

Civil Aircraft Propeller Shipments: 1949-1950

	Civil propellers	
	1950	1949
Total	10,413	11,343
January	613	791
February	701	599
March	789	1,367
April	1,082	1,303
May	915	1,429
June	980	1,252
July	913	831
August	1,009	1,012
September	899	919
October	815	685
November	1,045	438
December	652	717

Helpful Publications

Publications listed below are on sale by the Superintendent of Documents, Government Printing Office, Washington 25, D. C. Orders must be accompanied by money order or check made payable to the Superintendent of Documents.

Flight Assistance

Airman's Guide and Flight Information Manual ..... $6 a year

(The Airman's Guide, published every 2 weeks, contains three sections: Directory of Airports, Radio Facility Data, and Notices to Airmen. The Flight Information Manual supplements the Airman's Guide and is issued semiannually.)

Airports

Airport Buildings ..... 20 cents

(Problems of airport building design are discussed and several solutions suggested.)

Airport Design ..... 30 cents

(Provides basic information on airport construction.)

Airport Drainage ..... 30 cents

(Contains information helpful in developing an efficient and economical airport drainage system.)

Airport Landscape Planting ..... 15 cents

(Provides practical information on how to improve the appearance of an airport.)

Airport Turfing ..... 25 cents

(Describes various problems involved and presents methods used in establishing and maintaining a good turf.)

Seaplane Facilities ..... 25 cents

(Answers problems posed by the planning and construction of seaplane bases.)

Small Airports ..... 15 cents

(Answers to many problems confronting communities or individuals who want to build a small airport.)

Standard Specifications for Construction of Airports $2

(Contains specification items for construction of airports and air parks. Covers clearing and grubbing, grading, drainage, paving, lighting, turfing, and incidental construction.)

Flight Training

Aircraft Powerplant Handbook $1.25

(For students, mechanics, pilots, and engineers who have only superficial knowledge of aircraft powerplant fundamentals.)

Facts of Flight ..... 50 cents

(A nontechnical manual, with chapters on airplane flight, stalls, spins, airplane structure, airplane engines, flying the plane, airport traffic, seaplanes, and safety in flight.)

Path of Flight ..... 40 cents

(Practical information about basic navigation of aircraft, presented in brief form for the use of the private pilot.)

Realm of Flight ..... 60 cents

(Presents practical information about the effect of atmospheric conditions upon flight.)

Flight Instructor Oral Examination Guidebook ..... 5 cents

(Prepared as an aid to the prospective applicant for a flight instructor rating.)

Personal Aircraft Inspection Manual ..... 55 cents

(Contains information dealing with the fundamentals of inspection and provides a general maintenance guide for the owners of personal type aircraft.)

Miscellaneous

ANC Procedures for the Control of Air Traffic ..... 40 cents

(Officially approved manual of air traffic control procedures adopted for use by civil and military air traffic control personnel. These procedures are required to be followed by all civil controllers holding certificates under Part 26 of the CAR.)

Industrial Flying ..... 10 cents

(A brief description of various uses for the airplane in industrial flying.)

Student Pilot Guide ..... 10 cents

(Presents information of particular importance to student pilots during the early stages of flight training.)

Terrain Flying ..... 25 cents

(Describes the special problems and hazards encountered in flying over various kinds of terrain and proper precautions.)

The Air Fair ..... 20 cents

(Gives detailed helps in planning and operating an air fair.)

Certificated Cargo Carriers

Scheduled and Nonscheduled Operations: July–December 1950

Month	Airnews, Inc.				The Flying Tiger Line, Inc.			
	Revenue miles	Freight ton-miles	Available ton-miles	Load factor (percent)	Revenue miles	Freight ton-miles	Available ton-miles	Load factor (percent)
July	28,782	39,765	103,922	38.26	314,198	1,800,705	2,188,676	82.27
August	29,004	33,331	101,514	32.83	372,490	2,037,194	2,468,526	82.53
September	27,634	32,585	96,719	33.69	378,447	1,895,442	2,479,538	76.44
October	29,439	33,215	101,514	32.72	398,208	2,072,048	2,576,052	80.44
November	29,076	31,859	99,666	31.97	388,874	2,086,316	2,502,944	83.35
December	29,430	31,855	101,395	31.42	497,841	2,714,841	3,218,516	84.35
6-month total	173,365	202,610	604,730	33.50	2,350,058	12,606,546	15,434,252	81.68
12-month total	340,969	471,092	1,166,138	40.40	4,013,541	21,435,309	27,653,136	77.51

Month	Slick Airways, Inc.				U. S. Airlines, Inc.			
	Revenue miles	Freight ton-miles	Available ton-miles	Load factor (percent)	Revenue miles	Freight ton-miles	Available ton-miles	Load Factor (percent)
July	833,188	3,980,654	4,716,154	84.40	98,962	244,301	574,095	42.55
August	1,003,031	4,966,889	5,908,615	84.06	100,225	447,479	501,125	89.29
September	989,354	4,849,291	5,963,734	81.31	113,432	401,284	720,328	55.71
October	1,041,815	5,463,750	6,300,070	86.73	99,064	346,841	684,020	50.71
November	1,048,268	5,400,233	6,232,564	86.65	127,058	397,754	814,786	48.82
December	1,023,109	5,679,720	6,168,065	92.08	149,539	537,434	822,521	65.34
6-month total	5,938,765	30,340,537	35,289,202	85.98	688,280	2,375,093	4,116,875	57.69
12-month total	9,676,398	45,612,474	56,446,854	80.81	1,248,432	3,896,585	6,767,596	57.58

Month	Total			
	Revenue miles	Freight ton-miles	Available ton-miles	Load factor (percent)
July	1,275,130	6,065,425	7,582,847	79.99
August	1,504,750	7,484,893	8,979,780	83.35
September	1,508,867	7,178,602	9,260,319	77.52
October	1,568,526	7,915,854	9,661,656	81.93
November	1,593,276	7,916,162	9,649,960	82.03
December	1,699,919	8,963,850	10,310,497	86.94
6-month total	9,150,468	45,524,786	55,445,059	82.11
12-month total	15,279,340	71,415,460	92,033,724	77.60

Foreign Nationals Given Special Training by the CAA

Special aviation training was given to 74 men from 20 foreign countries by the Civil Aeronautics Administration during the last half of 1950.

Under the Department of State program 36 men from 11 South and Central American countries have taken a variety of studies under CAA direction. This training included courses in aviation safety, aircraft maintenance, airline maintenance, radio aids, airport management, CAA communications, maintenance of air navigation aids and air traffic control. Sixteen of these trainees have finished their courses and returned home.

The Department of State also sponsored the training of one man from the Philippine Islands and two from India in the new airway aids.

For the Economic Cooperation Administration, the CAA gave special training to 28 men from five European countries—Denmark, Greece, Ireland, Italy and Turkey.

Each of these men was a high-level employee of his government or of a civil aviation enterprise in his country. Of these, 21 have finished their courses in the U. S.

The Department of Defense has sponsored seven men, four from Iceland and three from Japan, for training in air traffic control. Their training will last for 6 to 8 months, and the graduates will return to service with the civil aviation organizations in their own countries. All still are in training.

A portion of the trainees from other friendly countries receive training at the CAA Aeronautical Center, Oklahoma City. Practical on-the-job experience usually supplements this classroom and laboratory instruction. Courses are from 3 months to a year.

The remaining Foreign Nationals receive their experience through study, observation and practical training at CAA offices and installations, at aviation factory service schools, with airlines, or other aviation industry concerns.

Commercial Test Includes Radio

(Continued from page 37)

municating with control towers and airway stations; and use of omniranges for navigation and use of four-course low frequency ranges for determining fixes by beam intersections and quadrant identification, excluding "orientation procedures" as used in instrument flying.

Essential information for preparing for this phase of the examination is contained in the CAA publications "Facts of Flight," "Practical Air Navigation" and the "Flight Information Manual."

Number of Airports in U. S. Shows Slight Decrease

The total number of civil and military airports in the United States on record with the Civil Aeronautics Administration showed a slight decrease during 1950. As of January 1, 1951, there were 6,403 airports compared with 6,484 a year earlier.

The larger airports—Classes IV, V, VI and over—showed a total increase of 11. Class IV airports increased from 447 in 1949 to 452, Class V increased from 185 to 188, and the 1950 total of 152 for the Class VI or over showed an increase of 3.

Texas still leads all other States with a total of 619 although showing a decrease of 28; California, with an increase of 21, is second with 530; and New York is third with 255, 7 more than Michigan's 248.

The State-by-State distribution of airports by type and class as of January 1, 1951, is shown below:

United States Airports by States, January 1, 1951

(Data covers existing airports recorded with CAA)

State	Total	By Type [1]					By Class					
		Commercial	Municipal	CAA Intermediate	Military	All Other	Sub I and I [2]	II	III	IV	V	VI and over
Alabama	87	25	35	0	16	11	45	14	13	11	2	2
Arizona	178	32	48	1	22	75	73	43	30	16	15	1
Arkansas	86	34	32	0	0	20	56	10	11	9	0	0
California	530	169	162	6	43	150	296	88	53	35	34	24
Colorado	107	30	55	2	3	17	57	23	20	1	0	6
Connecticut	32	18	9	0	0	5	23	1	3	4	1	0
Delaware	17	11	2	0	1	3	10	4	0	1	0	2
District of Columbia	3	0	0	0	2	1	0	0	0	1	1	1
Florida	189	42	93	1	46	7	54	25	41	39	12	18
Georgia	124	17	56	1	11	39	52	18	23	24	2	5
Idaho	141	14	69	1	1	56	115	14	7	2	0	3
Illinois	176	111	38	2	3	22	109	46	8	9	4	0
Indiana	152	105	34	0	4	9	103	29	10	8	2	0
Iowa	179	57	56	1	2	63	148	16	6	8	0	1
Kansas	191	50	99	1	6	35	128	27	14	5	9	8
Kentucky	64	29	15	1	2	17	50	4	5	4	0	1
Louisiana	79	13	33	1	3	29	42	12	12	8	2	3
Maine	65	25	26	0	2	12	41	6	12	2	2	2
Maryland	55	30	7	0	7	11	26	15	4	7	0	3
Massachusetts	74	45	22	0	5	2	46	8	10	7	0	3
Michigan	248	94	119	0	5	30	176	42	14	12	2	2
Minnesota	122	39	80	0	1	2	76	34	6	4	1	1
Mississippi	83	23	34	1	6	19	46	13	14	8	1	1
Missouri	111	46	49	1	1	14	74	18	11	5	3	0
Montana	113	14	77	1	1	20	82	13	6	6	2	4
Nebraska	139	38	72	1	1	27	106	13	5	2	2	11
Nevada	76	18	18	6	3	31	39	6	12	9	9	1
New Hampshire	34	16	12	0	1	5	24	4	3	2	0	1
New Jersey	91	68	12	0	5	6	83	13	9	4	1	1
New Mexico	99	20	33	8	7	31	54	15	6	9	8	7
New York	255	123	48	2	7	75	190	30	12	16	5	2
North Carolina	141	74	36	0	11	20	88	17	19	11	2	4
North Dakota	137	39	62	6	0	30	112	14	3	8	0	0
Ohio	239	160	40	4	4	31	174	43	8	10	2	2
Oklahoma	147	35	83	1	5	23	90	22	12	13	7	3
Oregon	119	31	42	2	0	44	80	9	11	14	4	1
Pennsylvania	221	161	44	2	5	9	174	25	14	7	1	0
Rhode Island	12	7	3	0	2	0	7	1	1	1	2	0
South Carolina	61	18	35	1	5	2	25	13	3	11	6	3
South Dakota	71	16	47	1	1	6	49	9	6	3	2	2
Tennessee	64	28	23	1	2	10	38	13	5	6	2	0
Texas	619	139	164	5	50	261	371	114	49	49	25	11
Utah	60	8	37	6	3	6	23	15	13	3	5	1
Vermont	21	10	9	0	1	1	17	0	3	1	0	0
Virginia	126	68	22	2	14	20	82	19	10	11	2	2
Washington	178	51	71	1	11	44	113	25	11	17	5	7
West Virginia	57	27	14	2	0	14	43	8	2	3	1	0
Wisconsin	174	89	63	2	0	20	123	34	12	3	1	1
Wyoming	56	12	32	2	0	10	29	9	13	3	1	1
Total	6,403	2,329	2,272	76	331	1,395	4,042	994	575	452	188	152

[1] Airport type definitions: Commercial—Public use and public services, privately owned and operated. Municipal—Public use and public services, municipally owned and/or operated. CAA Intermediate—Public emergency use, no services, CAA operated. Military—Public restricted, military operated. All others—(a) Public emergency use only. No public services, privately owned for personal use; (b) Public emergency use only, no public services, government-owned Forest Service, etc.

[2] Sub I airports are those which exist but do not come up to Class I standards.

CAA Finds Way to Get Better Radio Reception

Safer flying can result from better radio reception in personal planes, and techniques for improving reception quality now are known, according to a study made for the Civil Aeronautics Administration by Electronics Research, Inc., of Evansville, Ind.

As a result of intensive tests carried out on nine makes of personal planes, the CAA reports that most complete noise suppression in the very high frequency receivers now coming into general use is obtained with a properly maintained, shielded ignition system. Use of resistance spark plugs without shielded harness provides an economical but not as good means of reducing ignition noises, the study revealed. It also showed that location of the VHF receiver and the length of the antenna transmission line are not critical in the small plane and that spark plugs are the worst offenders in producing disturbing noises.

To make the results of the study widely available for practical application, CAA has issued a leaflet on installation of VHF radio, entitled "VHF Noise Reduction in Light Aircraft," which can be obtained from the Office of Aviation Information, CAA, Washington 25, D. C.

Planes included in the contractor's study were the Piper Cruiser, Stinson Voyager, Ryan Navion, Beechcraft Bonanza, Ercoupe, Luscombe, Swift, Bellanca, and Cessna. It was found that the best location for the V-type antenna on most small planes was over the forward part of the cabin.

Civil Aviation Highlights

	1951	1950
Airports and airfields recorded with CAA, *March 1*	6,388	6,476
By type: [1]		
Commercial	2,278	2,555
Municipal	2,288	2,204
CAA Intermediate	75	136
Military	335	347
All Others	1,412	1,234
a. Personal use	1,252	.....
b. Miscellaneous government	160	.....
Civil airports and airfields by class: [2]		
Total	6,053	6,129
Class I and under	3,984	4,051
Class II	962	989
Class III	513	500
Class IV	374	375
Class V	138	136
Class VI and over	82	78
Total U. S. civil aircraft, *March 1*	92,210	92,599
Scheduled air carrier aircraft, *March 1*	1,227	1,154
Civil aircraft production, *January:*		
Total	255	167
1- and 2-place models	90	45
3-, 4-, and 5-place models	155	112
Over 5-place models	10	10
Certificates approved, *January:*		
Student pilots	2,652	2,995
Private pilots	1,599	1,693
Commercial pilots	447	401
Airline transport pilots	92	79
Mechanics (original certificates)	386	435
Ground instructors (original certificates)	56	149
Flight instructor ratings	135	102
Instrument ratings	136	94
Control tower operators	72	105
Traffic control activity, *January:*		
Aircraft operations, CAA airport towers	1,125,090	1,009,828
Fix postings, CAA airway centers	1,125,834	998,516
Instrument approaches, CAA approach control towers	31,655	31,989
AIRPORT OPERATIONS		
Washington National, *February:*		
Scheduled air carrier:		
Passengers departing	75,811	44,307
Passengers arriving	73,122	42,653
Aircraft arrivals and departures	9,147	7,660
Other aircraft arrivals and departures	2,935	1,817
San Francisco Municipal, *January:*		
Scheduled air carrier:		
Passengers departing	48,120	33,376
Passengers arriving	50,582	35,380
Aircraft arrivals and departures	7,149	6,676
Other aircraft arrivals and departures	3,032	2,891
Oakland Municipal, *January:*		
Scheduled air carrier:		
Passengers departing	8,553	3,327
Passengers arriving	8,634	2,820
Aircraft arrivals and departures	4,941	4,473
Other aircraft arrivals and departures	8,828	10,434
Miami International, *January:*		
Scheduled air carrier:		
Passengers departing	84,038	60,994
Passengers arriving	82,924	58,083
Aircraft arrivals and departures	10,517	8,640
Other aircraft arrivals and departures	10,172	10,044
Los Angeles International, *January:*		
Scheduled air carrier:		
Passengers departing	[3]	42,366
Passengers arriving	[3]	40,243
Aircraft arrivals and departures	8,893	8,127
Other aircraft arrivals and departures	6,842	5,264

[1] Airport type definitions: Commercial – Public use and public services, privately owned and operated. Municipal – Public use and public services, municipally owned and/or operated. CAA Intermediate – Public emergency use, no services, CAA operated. Military – Public restricted, military operated. All others – (a) Public emergency use only, no public services, privately owned for personal use; (b) Public emergency use only, no public services, Government-owned Forest Service, etc.

[2] The following is a breakdown of paved airports and unpaved airfields by class:

Class of Facility	Paved Airports	Unpaved Airfields	Totals
I and under	115	3,869	3,984
II	166	796	962
III	337	176	513
IV	335	39	374
V	131	7	138
VI and over	79	3	82
Totals	1,163	4,890	6,053

[3] Not available.

Board Order Grants Irregular Carriers Military Exemption

In actions taken recently the Civil Aeronautics Board amended Part 291 of the Economic Regulations, approved agreements filed by two associations of large irregular air carriers, and issued a special order granting certain military exemptions for large irregular and irregular transport air carriers, so as to make their facilities available to the Department of Defense.

The Board's orders and amendments were accompanied by a statement of policy which stated that "We shall exempt, for a period of 6 months, all of the irregular air carriers with transport-type aircraft in order to permit them to carry traffic, moving at government expense pursuant to contract calling for the furnishing of the full capacity of the aircraft, for the Department of Defense, without regard to the restrictions against regularity or the restrictions against the carriage of persons in foreign air transportation."

The Board pointed out that in the present period of national emergency great demands have arisen for the performance of special charter service for the Department of Defense and for groups of service men. In addition, it is important to the air transportation industry that there should exist carriers with aircraft, personnel, and facilities available to fill the unpredictable demands which cannot be met by the certificated air carriers who must provide adequate and regular air service to the communities they have been authorized to serve.

Number of Flights Limited. — The Board's amendments to Part 291 of the Economic Regulations incorporate changes proposed last year by the Board and on which public hearings have been held. The changes impose numerical restrictions on the number of flights permissible in order to maintain true irregularity of service. Specifically, the amended regulation provides that large irregular air carriers may perform only three flights per month in the same direction between eleven specified pairs of points and only eight flights per month between any other pairs of points. The Board also removed its previous restriction limiting Puerto Rican flights to three each month and increased the total permissible to eight trips each month, thus placing Puerto Rico on the same basis as other U. S. territories.

The Board at the same time approved agreements filed by two associations of large irregular air carriers, Independent Military Air Transport Association and Aircoach Transport Association. These associations propose to represent large irregular carriers in various matters before the Government and to offer their services, equipment and personnel for the use of the Department of Defense. The Board views favorably the formation of reputable associations of irregular carriers, especially in view of the policy of the Department of Defense to deal with carriers at the various bases through associations of carriers rather than directly with the individual carrier. The formation of these associations will permit full use being made of the services of the member air carriers by the Department of Defense.

In commenting on its policy concerning large irregular operations, the Board said that these steps were taken to encourage the operators to direct their energies into charter-type activities for the military services.

Device Developed by CAA Discovers Heart Defects

A device which will make the present electrocardiograph more effective in detecting abnormalities of the heart has been developed by the Medical Division of CAA.

The device is the ballistocardiograph, improved by electronic instrumentation. In practice it works like a seismograph, which is normally used to keep track of disturbances of the earth but records movements caused by the pulse instead, and is operated in conjunction with the familiar electrocardiograph.

The new instrument consists of a vertical rod holding a magnet rigidly supported in the field of an electric coil. The coil and its electronic accessories are mounted on a light wooden span placed across the patient's shins. Each movement of the body caused by a pulse beat shakes the coil, disturbing the magnetic field of the coil and sending the information in the form of electrical impulses into the electrocardiograph where it is recorded.

The electrocardiograph then shows, accurately measured, the actual velocity of body motion, disclosing abnormalities heretofore not shown on the record.

To determine the effectiveness of the newly instrumented device tests were conducted with more than 50 known cases of known coronary thrombosis and abnormalities were correctly indicated. In the current tests, a study by age groups, the findings disclosed a number of faulty hearts that had been undetected by the electrocardiograph alone. In the latest group to be tested—the 40 to 49 age group—it is estimated that 20% of the persons "okayed" by the electrocardiograph will be found to have indications of heart disease.

CAA's instrumentation of the ballistocardiograph makes the device practical for wider use and brings it within the economical range of more doctors.

The device was perfected by Dr. J. E. Smith, a CAA heart specialist, with the assistance of Malcolm Y. McCormick and J. D. Gardner of the Medical Division; John Magin, an electronic engineer; and Samuel Bryan, an instrument specialist.

Crews of International Carriers To Use CAA Cards for Passports

Certificated flight crew members of U. S. flag international carriers now can obtain a card from the Civil Aeronautics Administration which will serve in lieu of a passport for temporary admission to foreign countries.

Another step in the attempt to facilitate international air travel, the procedure has been agreed to by contracting states of the International Civil Aviation Organization. It establishes the card as a valid travel document in cities adjacent to the terminal airport until the departure of the airman's next regularly scheduled flight.

Application for the aircrewman identification card is made on form ACA–2116, available at any CAA Aviation Safety District Office or CAA International Field Office. The completed form should be submitted along with two recent identical photographs, full-face, head and shoulders only, size 1" x 1", and satisfactory evidence of United States citizenship.

When the application is approved, a convenient wallet-size card will be mailed to the air carrier for delivery to the applicant. There is no fee for the service.

The plan was worked out by the Subcommittee on facilitation of international air travel of the Air Coordinating Committee, and methods for putting it into practice were arranged by the Department of State, CAA and Immigration and Naturalization Service.

National's Operations Approved by Board In Recent Decision

The Civil Aeronautics Board recently announced the termination of its *National Route Investigation* case, which was instituted to investigate the routes and property of National. At the same time the Board either dismissed, severed from the Docket, or instituted proceedings to reach final decision with respect to the other issues in the proceeding.

The Board explained that the position of National in the air transportation system has changed substantially since the institution of this proceeding, at which time National was in a precarious financial position. The Board pointed out that National's severe decline in 1948 was due, in the most part, to National's labor strikes in that year; the grounding of National's DC–6 aircraft from November 11, 1947 to April 1, 1948, which is National's peak traffic season; and the resultant financial difficulties experienced by National which necessitated a drastic curtailment of promotional activities and thereby prevented National from sharing in the available traffic to the greatest extent possible.

Overall Performance Good.—The Board said, furthermore, that the record establishes that National has held its own since relieved of the causes leading to its bad performance in 1948 and an analysis of National's overall performance between the years of 1944 to 1950, exclusive of 1948, leads to the conclusion that National should continue to do as well as any other carrier in its class, while the most recent figures tend to show that continued performance for future periods may well result in National's becoming self-sufficient.

The Board pointed out that the National route investigation had broadened in scope and that essentially it was an investigation of the relationship of National's routes to the overall route structure, including interchange of equipment problems.

One of these included the application of National and Pan American Grace Airways for approval of an interchange agreement for the lease of Panagra equipment for operation over National's routes between Miami and New York. Also included was an application for extension of the Through-Flight Agreement between Pan American and Panagra for the lease of Panagra equipment to operate between Balboa and Miami. These two agreements provided for the operation of Panagra equipment between New York and Balboa. The record on these two proceedings was severed from the present case and certified to the Board for initial decision on the issue of temporary approval.

The Board consolidated these two proceedings, which also involve the question of whether or not the certificates of Eastern and Braniff should be amended to extend Eastern from Miami to Havana, Cuba, or Braniff from Havana to Miami for the purpose of an interchange. The Board also consolidated into such proceedings the application for approval of an interchange agreement between Eastern and Pan American to provide through service between New York and Latin American points.

The Board severed from the *National Route Investigation* case proceedings involving an inquiry into the stock holdings in National of W. R. Grace and Company and the application of Eastern and National for approval of a direct interchange agreement at New Orleans which, if approved, would provide one plane service, by interchange, between Houston and Miami. These two proceedings are to be assigned for further procedural steps.

New VHF Airway Starts Operations About July First

The first fully equipped very high frequency airway will go into experimental operation about July 1, according to the Administrator of Civil Aeronautics.

Futuristic-looking white plastic "derby hats", with hat brims 30 feet in diameter topped by 6-foot vertical "stovepipes," will be bringing the newest wonders of electronic navigation to aircraft flying the airway between New York and Chicago. Similar equipment eventually will replace existing radio ranges throughout the United States.

The "derby hat" structures, which rest atop rectangular buildings, house two types of electronic equipment. One is an omnirange, which radiates directional signals. The other, the antenna of which is inside the "stovepipe", is called distance measuring equipment. Used together, they make aerial navigation far safer, simpler and surer than has ever been possible before.

The omnirange-distance measuring equipment ground stations for this experimental airway are located near Chicago Heights, Ill., Millersburg, Ind., Toledo, Cleveland and Youngstown, Ohio; Philipsburg, Selinsgrove and Allentown, Pa., and Caldwell, N. J. In addition, units of distance measuring equipment, usually called DME for short, are being installed at Midway Airport in Chicago and at La Guardia Airport in New York to assist in low-visibility instrument approaches.

The Four-Course Range.—The older type of radio ranges, which have been in use for almost a generation, have certain inherent limitations. They send out courses in only four directions. Furthermore, a pilot must listen continuously to a monotonous dash-dot signal, which in bad weather frequently is interrupted or even obliterated by bursts of static. If he drifts off course, he no longer has any specific information about his position. Even when he is flying along an airway, he knows his exact position only when he passes over a radio marker.

The omnirange-DME system corrects all this by permitting the pilot to fly by eye instead of by ear, and by supplying pin-point position information continuously, whether he is on or off an airway. In adition, omniranges and DME operate in portions of the radio spectrum which are free from static interference. The omnirange uses frequencies between 115 and 118 megacycles, somewhat above the band used for FM radio. The DME, on the other hand, operates near 1000 megacycles, which is close to radar frequencies.

The distance measuring equipment requires a small pulse radio transmitter in the aircraft. This sends out pulse signals which are received by the DME ground station. The ground station, in reply, sends back other pulse signals which are picked up by the airborne equipment. The equipment in the aircraft automatically measures the time required for the "ground trip" of the radio signals, and translates this into nautical miles. The pilot, on a simple dial, can continually read his distance from the DME ground station to which he is tuned.

Although the radio signals travel at the speed of light—some 186,000 miles per second—the DME equipment in the aircraft is able to measure the time required for the transmission to and from the ground station with amazing accuracy. It even has a built-in "memory", which keeps the distance indication unchanged even if contact with the ground station is lost for a few seconds.

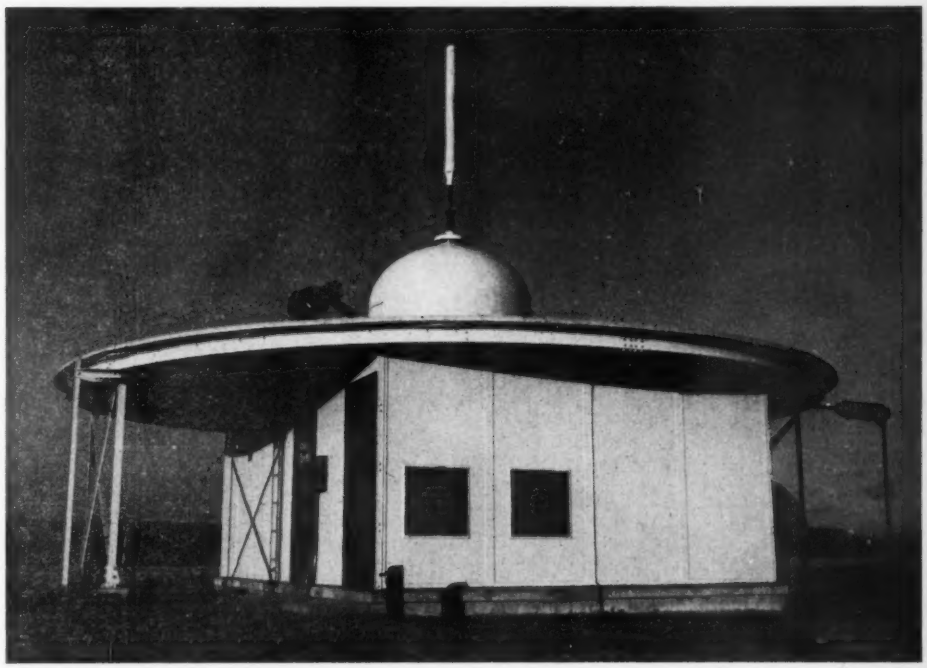
The pilot, flying "blind" through the overcast, can tell how far he is from a given point by looking at his DME dial. But to pin-point his position, he also needs to know his direction from that point. This information is provided by the omnirange.

Range Signals in all Directions.—The omnirange, as its name implies, sends out range signals in every compass direction. A relatively simple receiver in the aircraft picks up these signals and translates them into the necessary directional information. After tuning in his omnirange receiver, the pilot can read the direction of the omnirange station on a dial. At the same time, he can maintain a straight course to or from the omnirange by watching a vertical needle. If the needle moves to the right, the pilot alters his course slightly to the right; if it moves left, he flies left to correct his course. All corrections for cross-winds and magnetic variation are made automatically by the omnirange equipment itself—the pilot flying an omnirange course is always making good a straight track to or from the station.

While the New York to Chicago airway is the first to be equipped with the DME-omnirange combination, there are almost 300 omniranges now operating in the United States, and a complete airway based on omnirange alone was first commissioned in October, 1950. Plans call for a total of about 400 omnirange-DME's along U.S. airways, with additional DME installations at all airports with Instrument Landing Systems for low-visibility approaches.

The DME equipment is so new that the military services, the airlines, and the CAA have had limited experience in its operation and use. The primary purpose of the New York—Chicago airway is to obtain operational knowledge and experience regarding methods and procedures of using the omnirange-DME combination.

Structure Housing VHF Omnirange and DME



Omnirange structures like these will eventually replace the five-tower low-medium frequency ranges now in use for air navigation. The plastic dome atop the structure houses the omnirange antenna, while the distance measuring equipment antenna is inside the vertical "stovepipe" structure. The electronic equipment which feeds the two antennas is housed in the rectangular building. Inside the right-hand door is a motor-driven electrical generator which automatically provides electricity in case commercial power fails. The flat circular roof is a counterpoise, or artificial ground, which assures reliable signals in all directions.

Pilot Certificates Issued in 1950 Drop to Lowest Postwar Figure

The total number of student, private and commercial certificates issued by the Civil Aeronautics Administration during 1950 dropped to the lowest level in the postwar period. The 1950 total for these three categories was 75,725 as compared to 86,976 in 1949, 212,714 in 1948, and 319,609 during 1947.

The following table shows the issuances by month made during the year:

Pilot Certificates Issued in 1950

Month	Student	Private	Commercial
January	2,995	1,693	401
February	2,848	1,568	350
March	3,318	1,978	444
April	3,318	1,794	420
May	3,979	2,251	439
June	4,699	2,776	484
July	4,538	2,640	486
August	5,477	3,225	588
September	4,228	2,496	376
October	3,916	2,383	451
November	2,980	1,789	339
December	2,295	1,376	387
Total	44,591	25,969	5,165

The CAA has placed orders for 30 airborne DME units. Of these, about ten will be loaned to airlines flying the New York to Chicago route, and the rest will be used by the CAA and the military services for evaluation and testing. The airlines which will install the DME units include American, Capital, Eastern, Northwest, Pan-American, Trans-World and United.

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CAA Communicators Avert Crashes By Skill in Handling Emergency Calls

Skill and alertness of CAA radio communicators in reply to emergency calls averted a possible 1,560 fatalities and loss of aircraft estimated at $15,500,000, according to an analysis of the 1950 reports received by the Administrator of Civil Aeronautics.

Utilization of CAA's flight assistance service increased approximately 50% over 1949, when 5,825,947 requests were handled as against 8,541,685 in 1950.

This growing use of radio and of the preflight briefing service available to all pilots at CAA stations accounts in a large part for the reduction of emergencies handled during 1950, the Administrator said.

"When the service was inaugurated in 1948 the CAA's record showed about 4,400 emergency calls for aid had been received. With the increased emphasis on pre-flight and in-flight service the emergencies were reduced to 571 in 1949 and 475 in 1950. I also credit the increase in the filing of flight plans, which enables CAA to warn pilots enroute when weather conditions ahead change suddenly, with reducing the heretofore large number of emergency requests," the Administrator said.

Most emergency calls in 1950 were from pilots who were lost or caught in bad weather. Pilots get lost for various reasons. Some encounter heavy rain squalls and lose their bearings. Some are blown off course by strong upper winds. Some are lost in smoke haze. Some take off unwisely in, or fly into, weather too tough for them to handle, and others fail as weather prophets and get caught in weather.

Communicators "Fly" the Plane.—When the lost pilot calls in for assistance, the CAA communicator sets to work demonstrating that it is possible for a man sitting in a little house on the ground 40 or 50 miles away to "fly" an airplane and bring the craft out of an emergency situation to a safe landing.

A large number of the communicators working in the 459 CAA stations are pilots themselves, and all are quite familiar with the appearance of the ground from the air in the areas covered by their station. This, as many "saves" prove, is of great importance in their work.

Sometimes great ingenuity is necessary to bring about a safe landing. In fact, in orientating these lost pilots, CAA communicators use every conceivable type of landmark—highways, railroads, rivers, lakes, mountains, mills, advertising signs, buildings, towns, and cities.

A night-flying National Guard pilot contacted CAA radio at Macon, Ga., and reported his position was unknown. Visibility was reduced on account of thunderstorms and rain showers. Landmarks were difficult to distinguish in the darkness. Then the communicator thought of the searchlight used to advertise a certain drive-in theater. The operator of the theater was asked to leave the searchlight on. About an hour later the pilot saw the powerful beam, determined his position, and proceeded to a safe landing.

Another pilot's position was established when he reported passing over a swimming pool. An alert communicator remembered there was only one town in the vicinity with such a swimming pool.

Tanks Almost Empty.—A military aircraft, lost near Knoxville, was brought in after the communicator kept in continuous contact with the pilot for 21 minutes, relaying steering instructions and identifying landmarks. The plane landed with only 5 gallons of fuel. Another lost plane's position was determined and its course changed just before it flew into a danger area.

"Too many pilots seem to feel that federal airways aids to navigation are only to guide and control instrument traffic," said the Administrator in commenting on the reports of assistance provided by communicators to pilots. "There is a wealth of service available to the Visual Flight Rule pilot and it can be used without extensive and expensive airborne radio equipment.

"Then too, many VFR pilots who have had little or no experience in radio procedures hesitate to use the microphone for fear of committing a violation or arousing the displeasure of the CAA. This is bad. We want the pilots to talk to us. We don't care how they say it, but they should let us know when they need help. Any CAA station will alert direction-finding stations and obtain a radio fix for a pilot, help identify landmarks, suggest courses to fly, check weather reports and direct him to the nearest weathersafe field, make emergency ground arrangements on request, and assist in any way possible."

Nyrop Named to Board; Horne As Head of CAA

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CAA Renews Offer to Inspect Export Equipment

Foreign purchasers of U. S. aeronautical products are reminded again by the Civil Aeronautics Administration that its agents stand ready to inspect, upon request, all such items and issue certificates of airworthiness before export.

Continuing complaints from foreign purchasers have prompted CAA to make another effort to inform all foreign purchasers of the service offered by the CAA here. CAA agents abroad have been requested to redouble their efforts to promote good relations between the seller and the buyer.

No certificate of airworthiness is required when aircraft powerplants or aviation material generally are exported. If the purchaser desires, however, he can specify that the material shall be accompanied by evidence of CAA approval, and as a result the CAA in the U. S. will make the proper examination for an airworthiness export certificate. This service is free and covers all type certificated aeronautical products. Such an airworthiness certificate would furnish reasonable assurance of the airworthiness and acceptability of such products when delivered.

U. S. manufacturers of new aeronautical products insist upon exporting only airworthy items but for the past several years difficulties stemming principally from dealers in U. S. war surplus material have been encountered.

Complaints received by the CAA have been based upon failure of the exporter to provide a clear title of ownership to an aircraft; shipment of equipment, parts or material not wholly as represented; shipment of obsolete or worn-out equipment; shipment of parts which are corroded or otherwise damaged to an extent which makes them unserviceable; shipment of parts which have not been modified in accordance with the manufacturer's latest bulletins; and shipment of parts which have not been modified in accordance with applicable CAA mandatory airworthiness directives.

CAA representatives have discussed the problem with embassies in Washington and their civil air attaches. In addition, the CAA has published a manual containing all pertinent information on export of aeronautical material and distributed it widely to about 50 nations known to be our customers and with whom we maintain export relations.

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